

# TEAC

## **SERVICE MANUAL**

# A-H500i

## **Integrated Stereo Amplifier**

#### **NOTES**

- PC boards shown are viewed from parts side.
- The parts with no reference number or no parts number in the exploded views are not supplied.
- As regards the resistors and capacitors, refer to the circuit diagrams contained in this manual.
- A Parts marked with this sign are safety critical components

They must be replaced with identical components- refer to the appropriate parts list and ensure exact replacement.

Parts of [ ] mark can be used only with the version designated.

[J]: JAPAN [US]: U.S.A. [C]: CANADA

[E]: EUROPE [UK]: U.K. [GE]: GENERAL EXPORT

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## **Specifications**

Power output : 50W + 50W

 $(8\Omega, 1KHz, 0.1\%)$ 

Total harmonic distortion: 0.03%

(45W, 1KHz,  $8\Omega$ )

S/N Ratio (Input Short)

: 67dB (IHF-A) Phono CD, Tuner, Aux, Tape : 95dB (IHF-A) CD direct : 100dB (IHF-A)

Input Sensitivity/Impedance

Phono(MM) : 2.8mV/10KΩ CD, Tuner, Aux, Tape :  $180 \text{mV}/10 \text{K}\Omega$ 

Maximun Input level

Phono : 130mV CD, Tuner, Aux, Tape : 9V

Channel Separation(Input Short): 65dB

(1KHz, 1W, D.B.F)

Residual noise : 0.5mV Frequency response : 5Hz to 80KHz

Tone control

Bass  $\pm 10 dB (100 Hz)$ Treble : ±10dB (10KHz)

Required speaker impedance

:  $4\Omega$  to  $16\Omega$ 

: 120W [J] Power consumption

: 360W [EUR]

: AC 100V, 50~60Hz [J] Power requiremnts

: AC 230V, 50Hz [EUR]

: 285×131×329mm Dimensions (W $\times$ H $\times$ D)

Weight(net) : 6.9Kg

#### Standard accessories

Remote control unit : 1 Operator's manual : 1

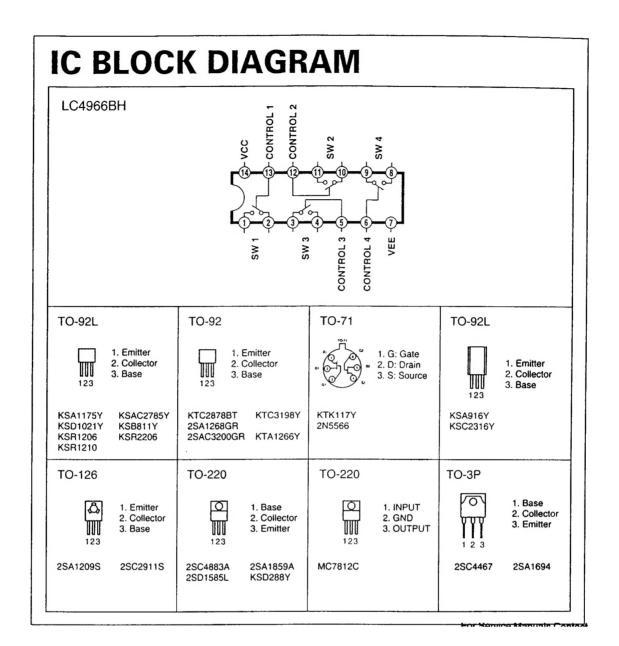
Improvements may result in specifications and features changing without notice.

Illustrations may differ slightly from production

models.

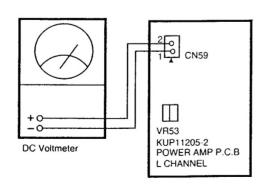
# IC FUNCTION (MI-COM BVIANAM 1187A)

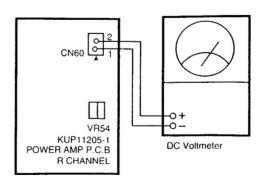
Pin No.	PIN NAME	1/0	DESCRIPTION	
1	FUNC MUTE	0	Function, Mute ON/OFF Output	
2	-20dB MUTE	0	-20dB Mute ON/OFF Output	
3	POWER MUTE	0	Power Mute Output	
4	SOURCE REC, OUT	0	Source recoding Output	
5	OPTION	1	Onting and HIROLINIES	
6	OPTION	1	Option port "HIGH" LEVEL	
7	PROTECT IN	1	Protect Input	
8	STBY	0	Stand by LED ON/OFF Output	
9	POWER ON/OFF	0	Power ON/OFF Output	
10	AUX	0	Function LED ON/OFF Output	
11	PHONO	0	Function LED ON/OFF Output	
12	N/C		Non connection	
13	TUNER			
14	CD			
15	TAPE 1	0	Function LED ON/OFF Output	
16	TAPE 2/MD			
17	Vss	1	GROUND BURBER LIES HE Chinese	
18, 19	N/C	1	Non connection	
20	RESET	1	Divice reset pluse input	
21	XL 1	0		
22	XL 2	1	Crystal element connection terminal	
23	TAPE 2 → 1	0	TARTAR	
24	TAPE 2 → 1		TAPE1,2 Recording Output	
25, 26	KEY OUT	0		
27, 28	KEY IN	I	Key mqtrix singal IN/OUT PORT	
29	TAPE2 REC IN	1	TAREA AR	
30	TAPE1 REC IN	1	TAPE2,1 Recording Input	
31	SOURCE REC, OUT	0	Source recoding Output	
32, 34	N/C		Non connection	
33	FUNC DOWN	1	F. T. A. LUD/DOMAN	
35	FUNC UP	1	Function UP/DOWN Input	
36	BUS IN	1	System control simgal Input	
37	REMOTE IN	1	Remote control simgal Input	
38	N/C		Non connection	
39	VDD	1	+5V	
40	BUS OUT	0	System control singal Output	
41	N/C		Non connection	
42	· VR UP	0	Volum LID/DOWNLOWN	
43	VR DOWN	0	Volum UP/DOWN Output	
44	CD DIRECT	0	CD Direct led ON/OFF Output	



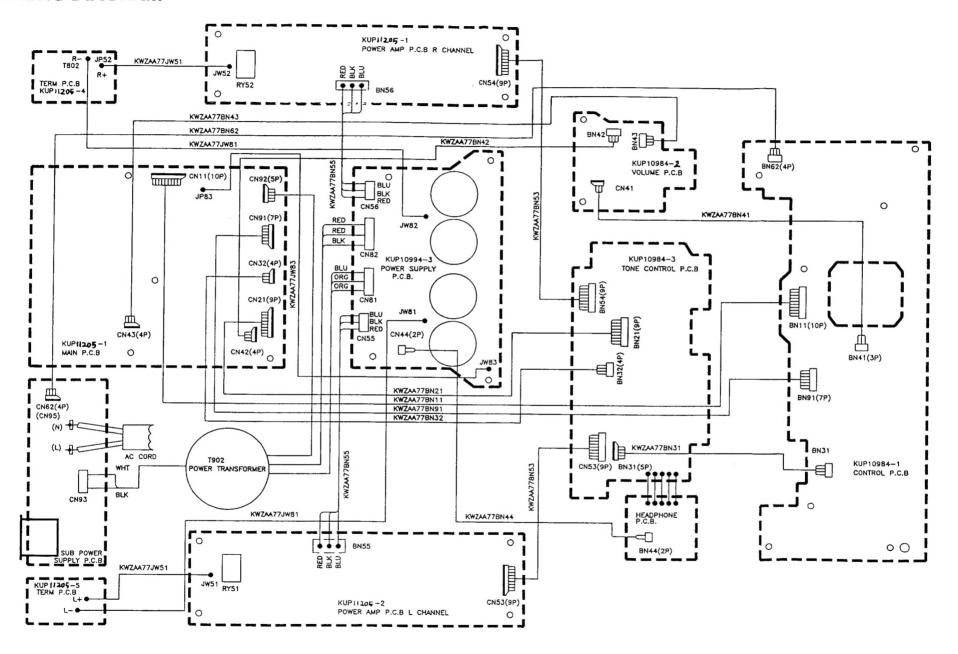
#### **BIAS CURRENT ADJUSTMENT**

- 1. Test equiment connection is shown in figure.
- 2. Place unit volume is minimum position.
- 3. Adjust VR53("L"CH), VR54("R"CH) so that the DC Voltage is 11mV.



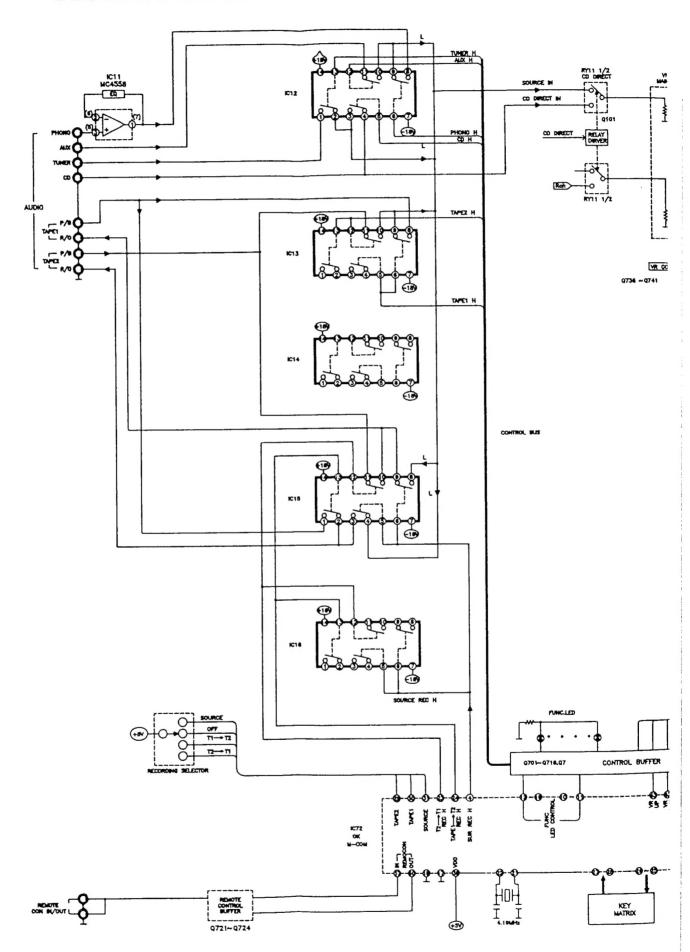


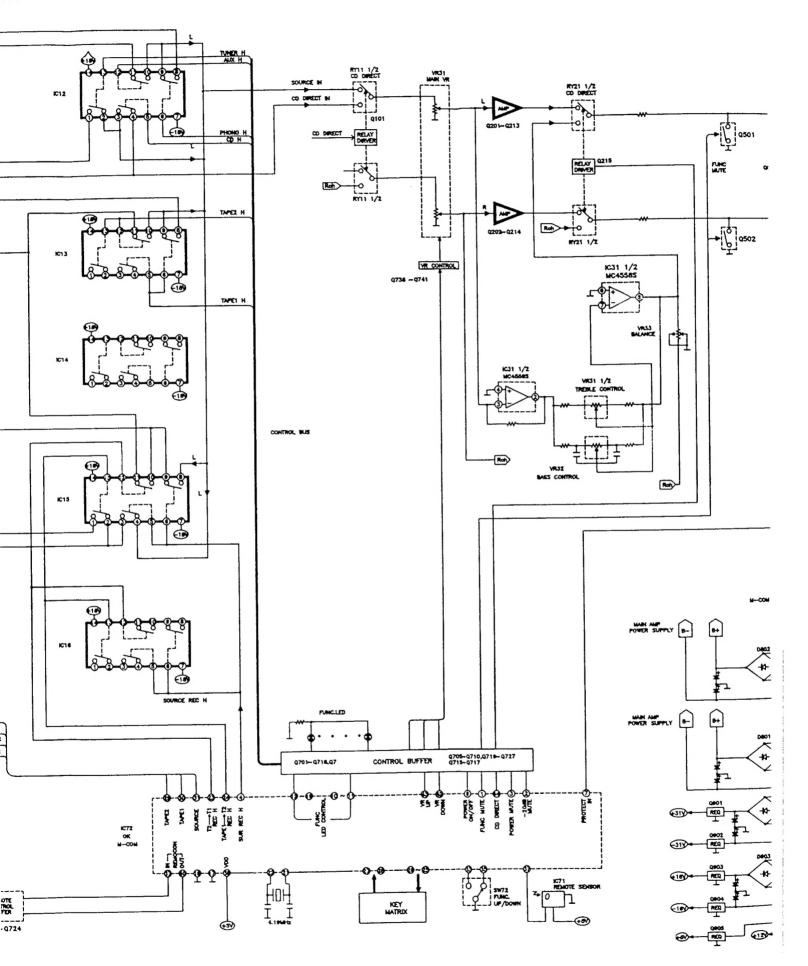
#### **WIRING DIAGRAM**

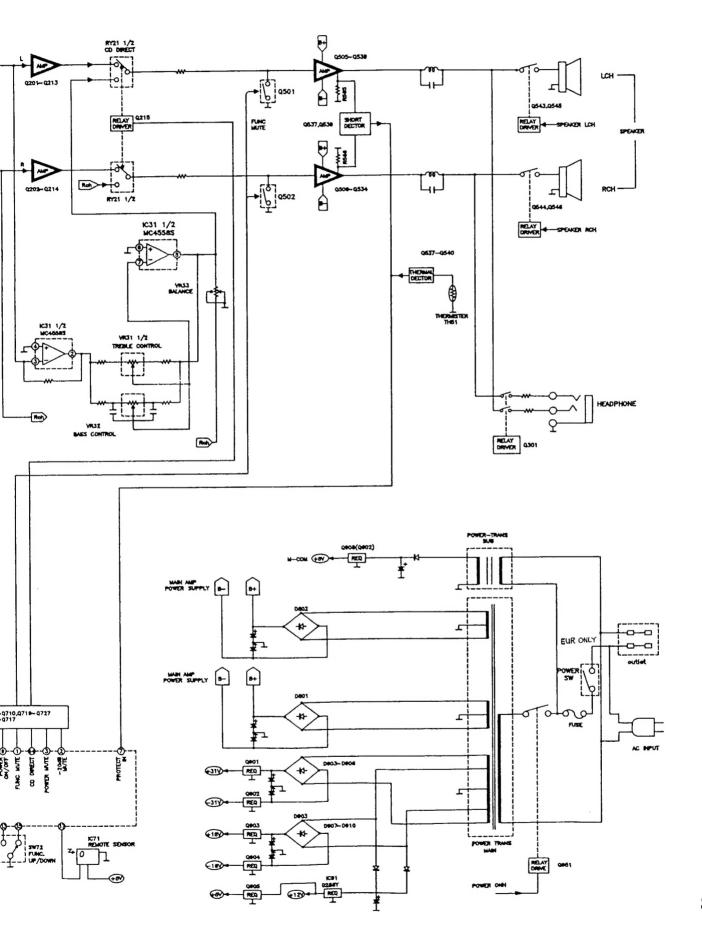


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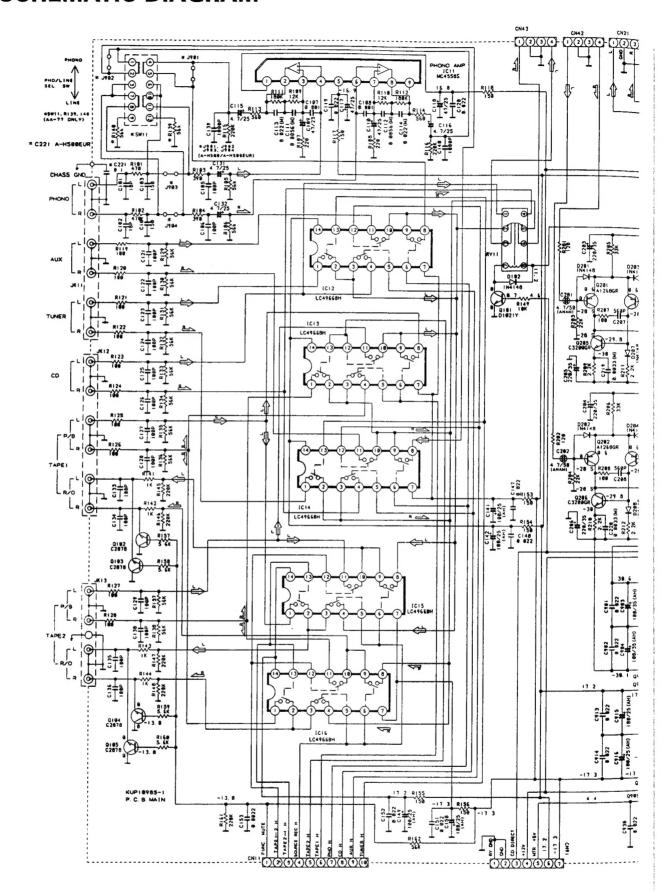
## **BLOCK DIAGRAM**



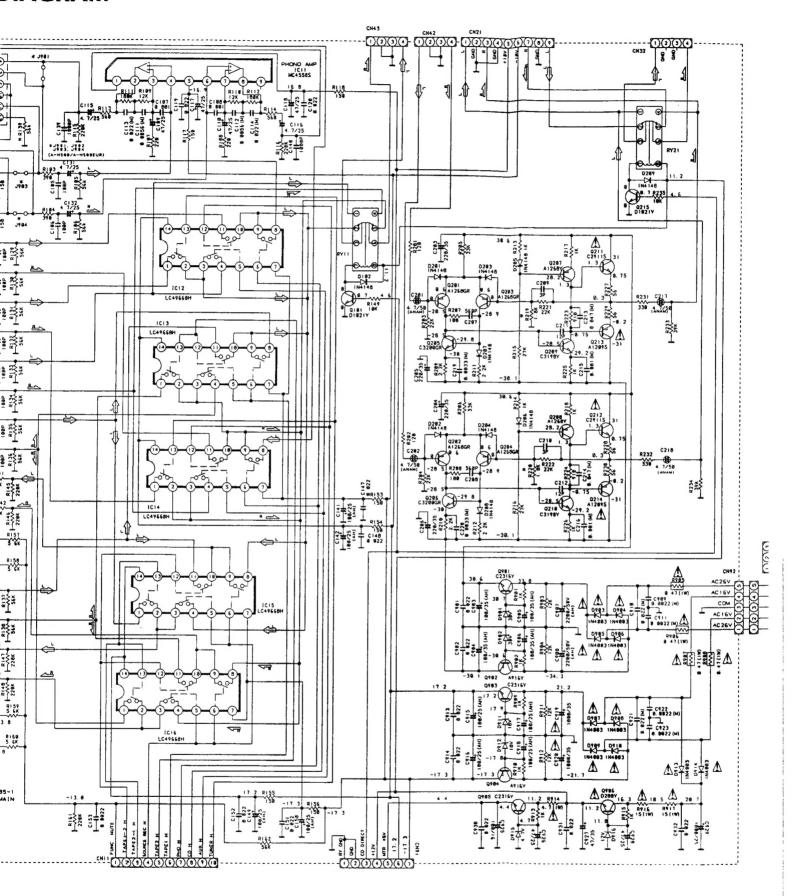


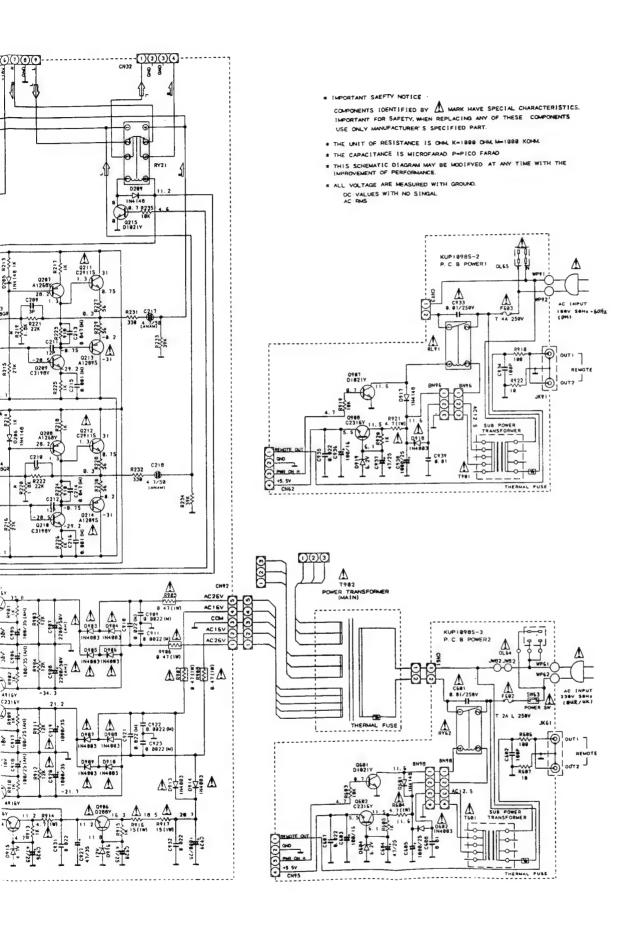


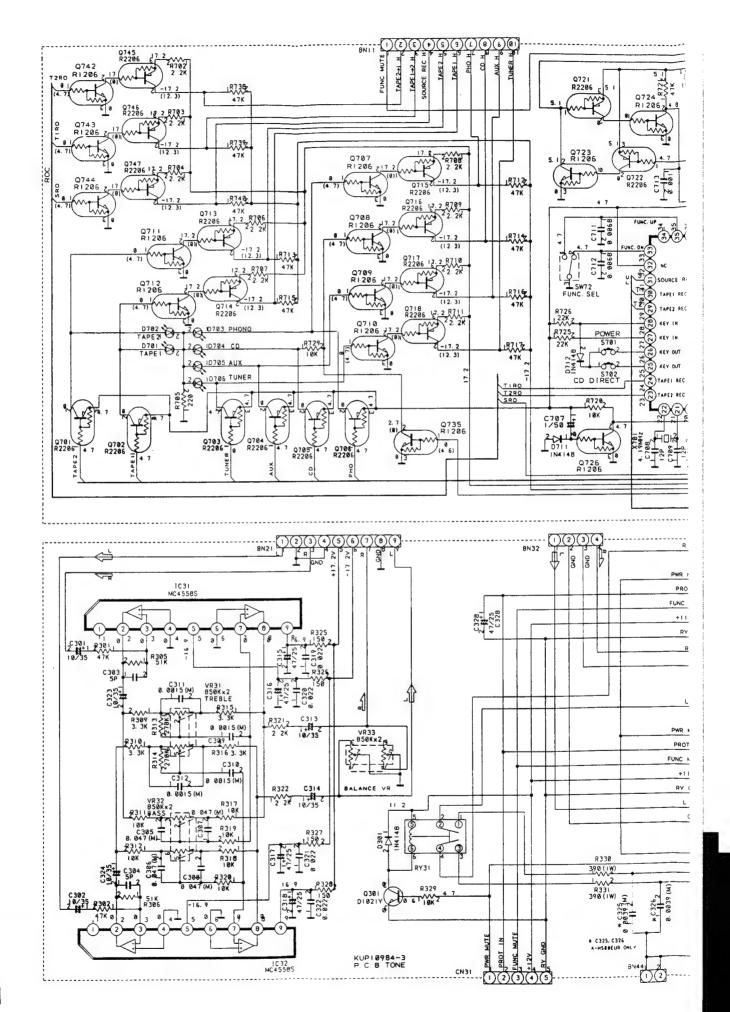
### **SCHEMATIC DIAGRAM**

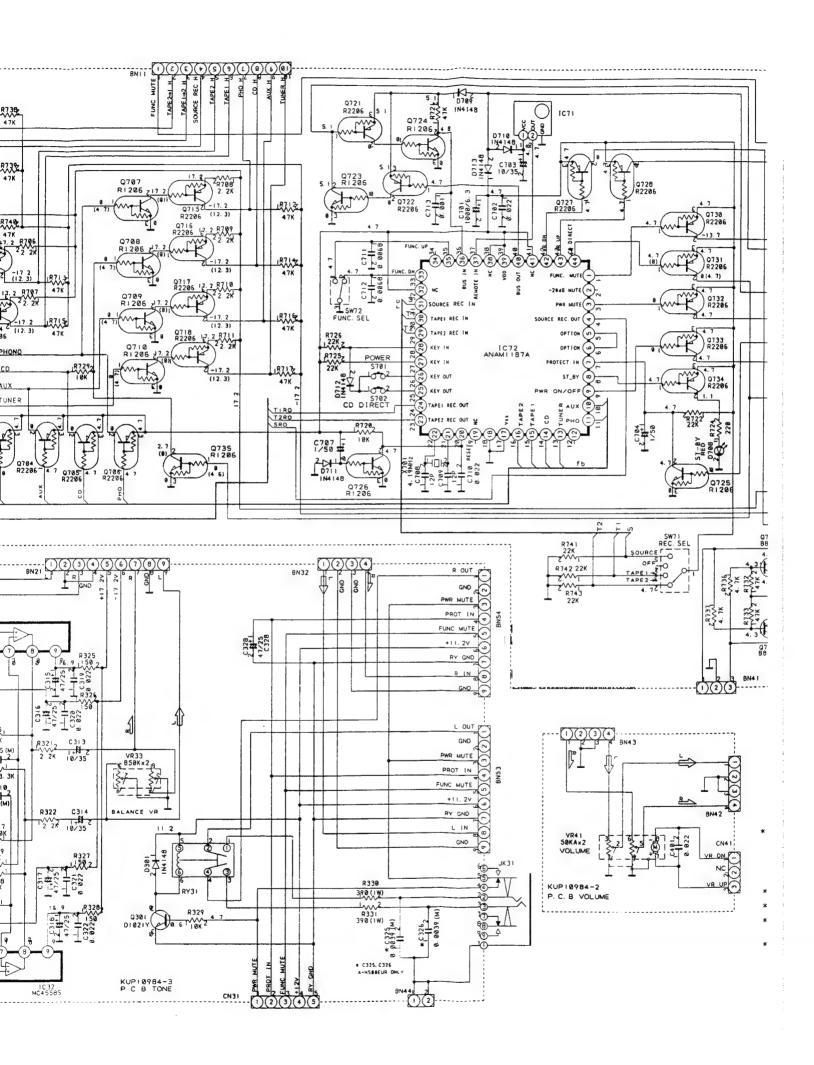


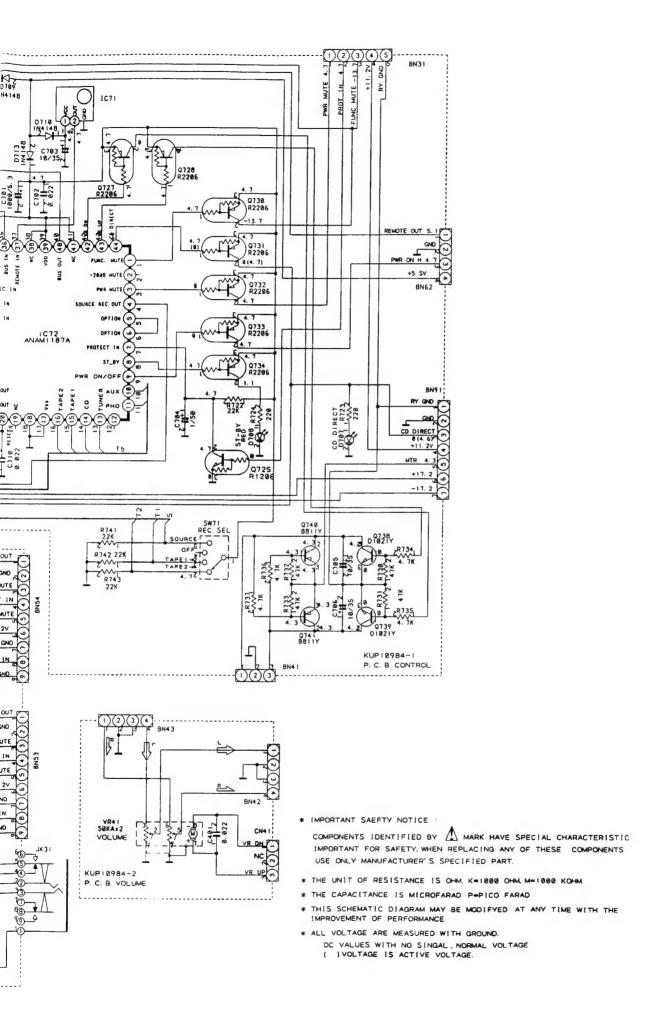
#### DIAGRAM

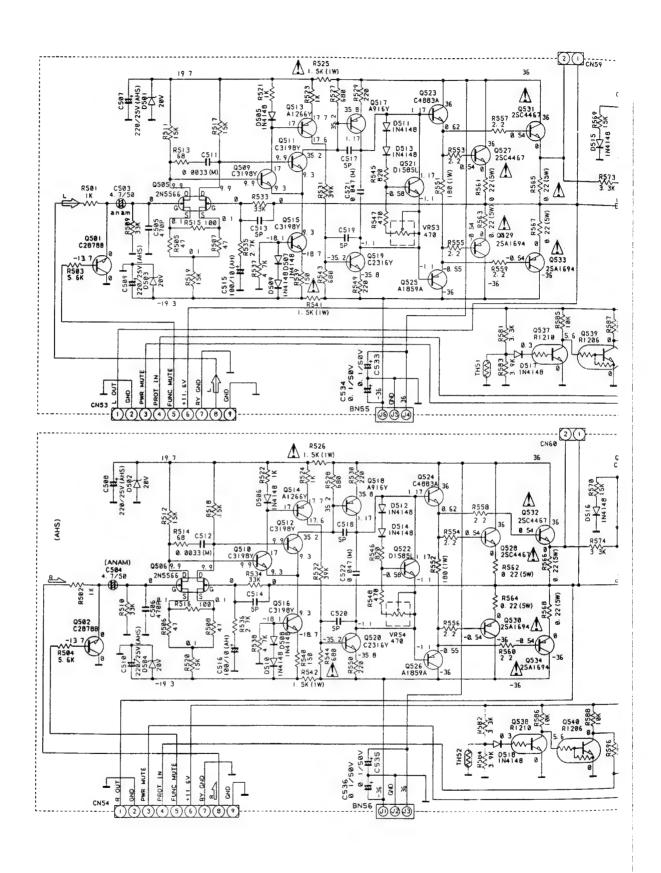


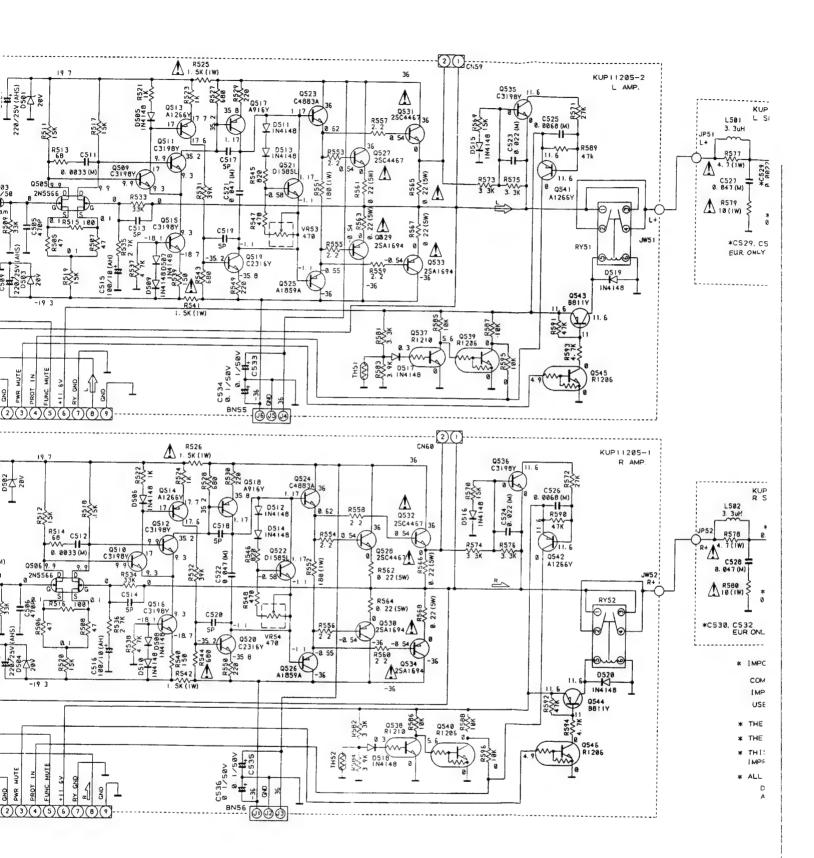


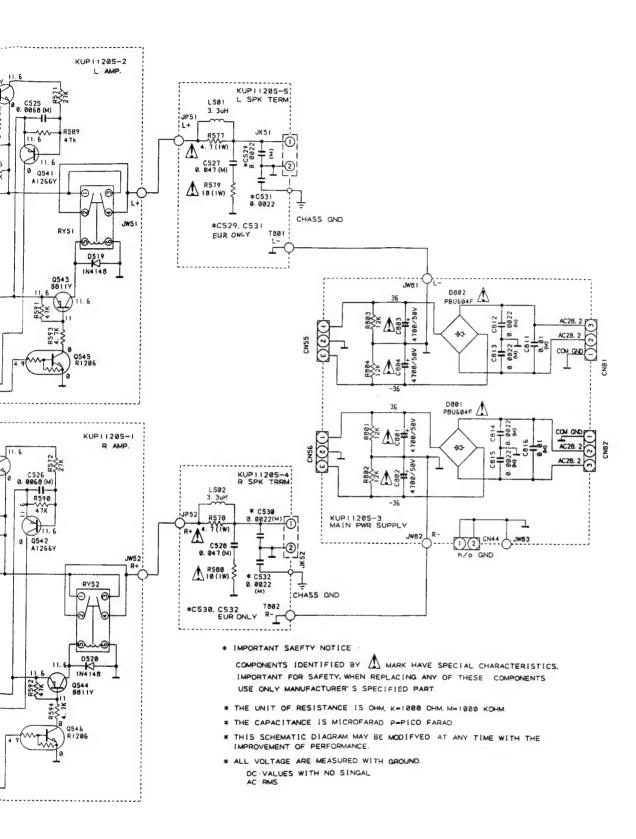


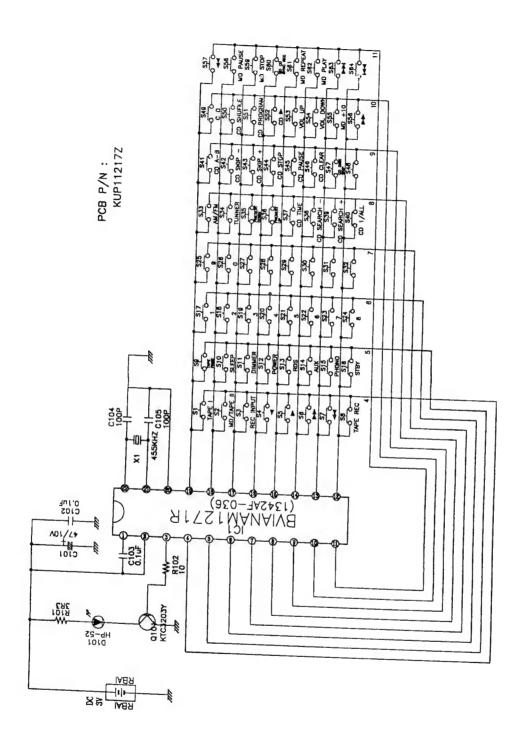




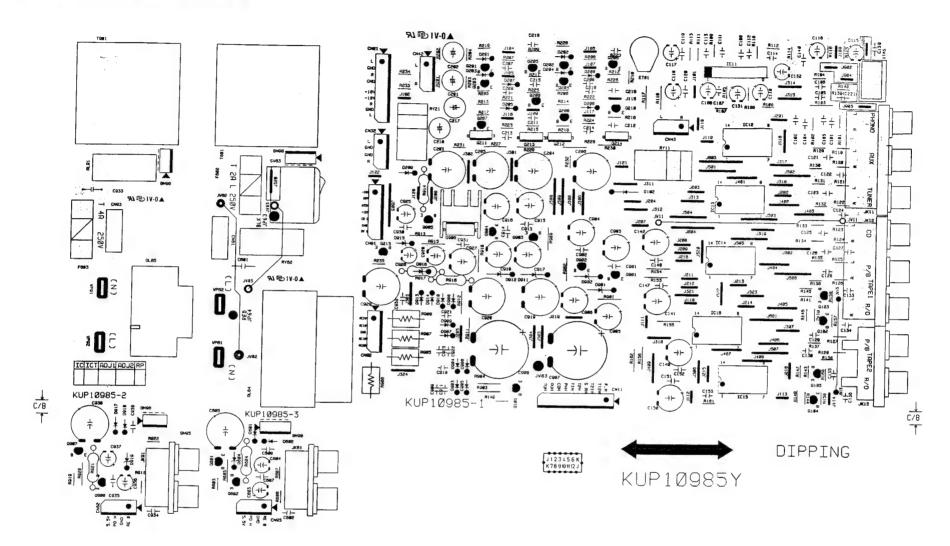


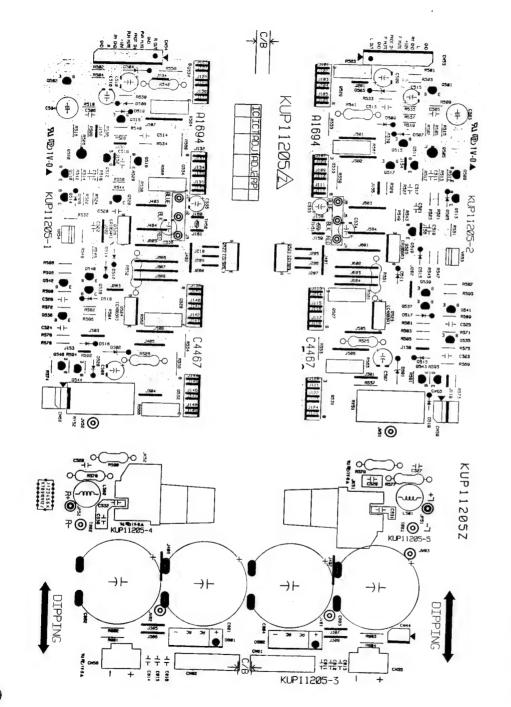


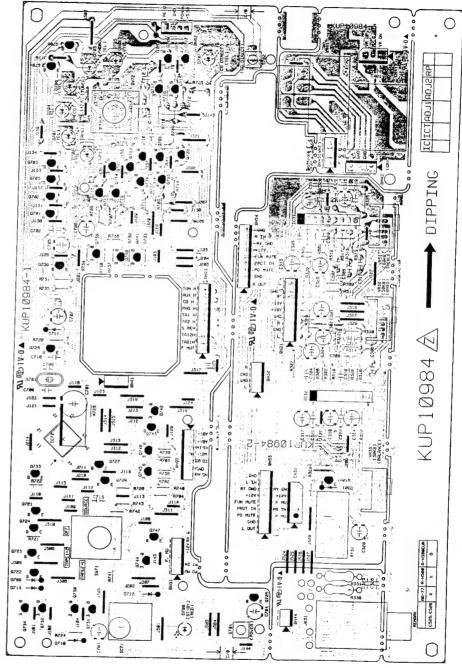


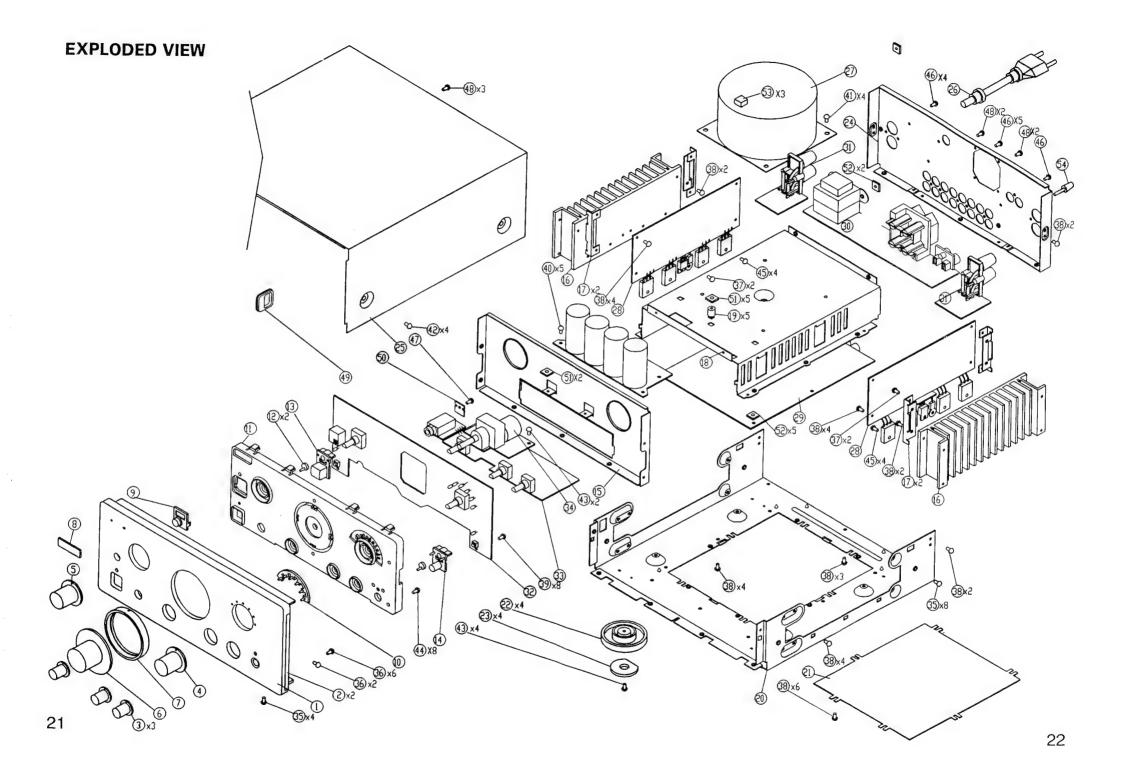


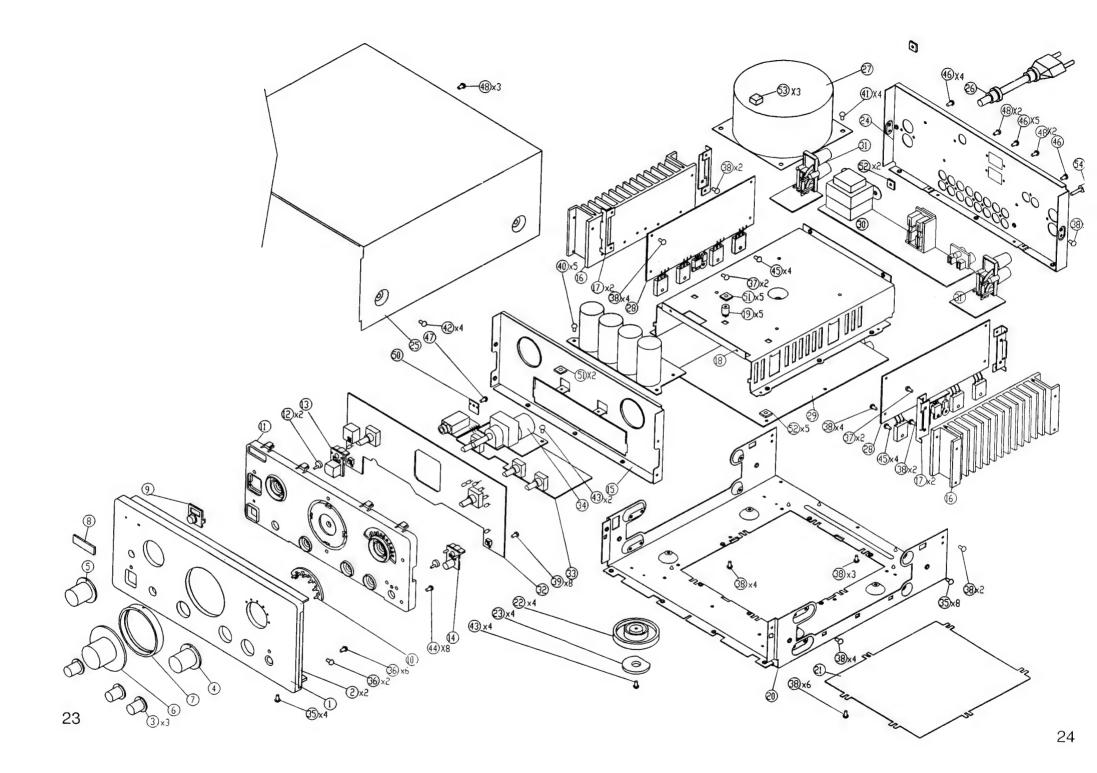
#### PRINTED CIRCUIT BOARDS











EXP!	.ODED	VIFW

EXPLODED V		. DESCRIPTION	REMARKS
4			
1		PANEL, AL	KKM1A052WC11
2		SIDE BAR	KKM1A062C11
3		VOLUME CAP ASS'Y (C)	KGX1A218ZA
4		VOLUME CAP ASS'Y (B)	KGX1A217ZA
5	9A06228800	VOLUME CAP ASS'Y	KGX2A217ZA
6		VOLUME CAP ASS'Y (A)	KGX1A216ZA
7	9A06228600	HOUSING, VOLUME	KGX1A219C12
8		BADGE,TEAC	BGB1A047
9	9A06863500	) WINDOW, SENSOR	KGU2A155
10	9A06863400	) INDICATOR, FUNCTION	KGL3A121
11		PANEL, MOLD	KGW1A178ZK64
12		INDICATOR, POWER	KGL2A120
		KNOB, POWER	KBT2A387ZK64
14	9A06319200	KNOB, TACT	KBT1A388ZK64
15	9A06235100	CHASSIS, FRONT	KUF1A020
16	9A06232300	HEAT SINK	KMY1A111
17	9A06232100	BRACKET, HEAT SINK	KMD1A327
		SUPPORT, TRANS	KMD1A328
		MOUNT, PCB A4-92-1728	KHE1A023
		CHASSIS, BOTTOM	KUA1A135
21	9A06235000	PLATE, BOTTOM	KUA1A136
	9A06315500		KKL1A047ZK63
		CUSHION , FOOT	KHG1A039Z
		PANEL, REAR [E]	KKF4A126SK59
		PANEL, REAR [J]	KKF3A126SK59
		CABINET, TOP	KKC4B077S21
26 ∧	9A01376900	BUSHING,AC CORD HEYCO(SR-	KHR129
		TRANS , TOROIDAL [E]	KLT5Z002ZE
	9A06232000		KLT5Z002ZJ
28	JA00252000	AMP PCB	KC13200223
29		MAIN PCB	
30			
		TRANS PCB	
31		SPEAKER PCB	
32		SUB PCB(A)	
33	0400007000	SUB PCB(B)	10.0.00.00.00.00.00
34	9AU0237UUU	VOLUME, MOTOR RK6312MC282	KVV9A08A503Z
35 9	9A01397400	SCREW KTS3+8J	KTS3+8J
36	9A06229000	SCREW, SPECIAL	KHD1A016
37 9	9A01535800	SCREW,KTB3+8J	KTB3+8J
38 9	9A01532600	SCREW KTB3+6J	KTB3+6J
		SCREW,KTB3+10G	KTB3+10G
	-	SCREW KTB3+16J	KTB3+16J
		SCREW KTB4+6FFZ	KTB4+6FFZ
		SCREW KTB4+6F	KTB4+6F
		SCREW KTW3+8J	KTW3+8J
		SCREW KTW3+6F	KTW3+6F
		SCREW KTW3+10G	KTW3+10G
		SCREW,KTB3+10GFZ	KTB3+10GFZ
		SCREW,KTWS3+10G	KTWS3+10G
	A01377200	SCREW KTB3+8JFZ	KTB3+8JFZ
49 50 9	9A06319600	VACANT BRACKET	KMD1A339
	,, 1000 1 3000	J.V.OKE1	MICIAGG
	A06229600	RUBBER, PCB	KHG1A139
		RUBBER, MECHA	KHG1A115
		RUBBER, TRANS	KHG1A144
		GROUND TERMINAL	KMA2A001
		FUSE,2C2000TLE [E]	KBA2C2000TLE
		FUSE,2C2000TLJ [J]	KBA2C4000TLJ
		CORD.POWER [E]	KJA2B010Y
	A06230100		KJA2J025Z
NCLUDED AC	CESSORIES		
		DESCRIPTION	REMARKS
	407104500	OMNER'S ALANHAL FIF (C/L/C [F]	V0V4 - 4007

RE

10.	PARTS NO.	DESCRIPTION	REMARKS	
		OWNER'S/MANUAL, E/F/G/I/S [E] OWNER'S/MANUAL J [J]	KQX1A480Z KQX1A489Z	
	9A07364020		KARTAH500IEUR	
		REMOCON XMTR ASSY (RC-710) [1]	KARTAH500IDM	

#### Resistor and Capacitor

Notes: Part numbers are indicated for most mechanical parts.

Please use this part number for parts order.

· IMPORTANT SAFETY NOTICE.

Components identified by  $\triangle$  mark have special characteristics important for safety. When replacing any of these components, use only manufacture's specified parts.

The unit of resistance is OHM(Ω)

K=1000(Ω), M=1000(KΩ)

· The unit of capacitance is MICROFARAD( $\mu$ F).

· P=10<sup>-6</sup>μF

#### ■ Numbering System of Resistor Example

 $\begin{array}{c|cccc} KRD & 25 & F & J & 101 \\ \hline Type & Wattage & Shape & Tolerance & Value \end{array}$ 

Resistor Type	Wattage	Tolerance
KRD:Carbon	20:1/5W	F:=±1%
KRG:Metal Oxide	25:1/4W	J:=±5%
	50:1/2W	K:=±10%
	1:1W	
KRF:Metal Cement	2:2W	
	3:3W	

## ■ Numbering System of Capacitor Example

 $\begin{array}{c|cccc} KCKT & 1H & 101 & K & B \\ \hline Type & Voltage & Value & Tolerance & Peculiarity \\ \end{array}$ 

Compositor Torre	Vol		
Capacitor Type	<b>ECEA Type</b>	Other	Tolerance
KCB:Ceramic	OJ:6.3V	1H:50V DC	C:±0.25pF
KCC:Ceramic	1A:10V	1:125V DC	G:±2%
KCK:Ceramic	1C:16V	KC:400V AC	J:±5%
KCFR:Semiconductor	1E:25V		K: ± 10%
KCQI:Polyester	1H:50V		Z: +80%, -20%
KCQP:Polypropylene	1V:35V		
KCQS:Polystyrol		- 0	

REF. NO. PARTS NO. DESCRIF	PTION	REMARKS
9A06232700 MAIN PC	B ASS'Y [J]	KOP10985C
9A07365620 MAIN PC		KOP10985F
9A06235300 PCB , MA		KUP10985Z
9A07365800 PCB MA		KUP10985Y
C907.908    9A06227100 CAP,EL		KCET1HAH222N
C919.920    9A06227000 CAP, EL		KCEA1VH102E
9A01390600 DIODE,1N	14148T	KVD1N4148T
0201-208 9A01390500 DIODE,1N		KVD1N4148MT
9A01390500 DIODE,1N		KVD1N4148MT
0602 9A05194600 DIODE,1N		KVD1N4003SRT
D604  ⚠ 9A06236200 DIODE,ZE		KVDMTZJ6.2BT
0901-910 A 9A05902200 DIODE,ZE		KVDUZ30BMT
0911.912 A 9A06236400 DIODE, Z		KVDUZ18BMT
9A05194600 DIODE,1N		KVD1N4003SRT
D915  ⚠ 9A06236100 DIODE, Z		KVDMTZJ4.7BT
D916  ⚠ 9A05359600 DIODE,ZE	NER MTZJ12BT	KVDMTZJ12BT
9A01390500 DIODE,1N	4148MT	KVD1N4148MT
9A05194600 DIODE,1N	4003SRT	KVD1N4003SRT
0919  ⚠ 9A06236200 DIODE,ZE		KVDMTZJ6.2BT
9A05328200 HOLDER,		KJCFC5S
603 9A05328200 HOLDER,		KJCFC5S
C11 9A05195800 IC,MC455		KVIMC4558S
C12.13 9A05971200 IC, LC496		BVILC4966
C16 9A05971200 IC.,LC496		BVILC4966
JK11.12 9A06230400 TERMINA		KJJ4R011Z
JK13 9A06326400 TERMINA		KJJ4P016Z
JK91 9A06230200 JACK, RE		KJJ4N023Z
(J61 9A06230200 JACK, RE		KJJ4N023Z
OL63 9A062243-00 OUTLET	CCT1304-0211 [J]	BJJ7A005Z
Q101 9A03811700 TR,KSD10		KVTKSD1021YT
0102-105 9A05896000 TRKTC28	78B	KVTKTC2878BT
Q201-204 9A06236600 TR,KTA12		KVTKTA1268GRT
Q205.206 9A06236700 TR,KTC32	00GRT	KVTKTC3200GRT
2207.208 9A05895900 TR,KTA12	66YT	KVTKTA1266YT
2209.210 9A05892800 TR,KTC31	98YT	KVTKTC3198YT
2211.212 ⚠ 9A06225500 T.R 2SC	911S	BVT2SC2911S
2213.214 🛆 9A06225300 T.R 2SA	209S	BVT2SA1209S
9A03811700 TR,KSD10		KVTKSD1021YT
9A03811700 TR,KSD10	21-YTA	KVTKSD1021YT
9A05196800 TR,KSC23	16-Y-SHTA	KVTKSC2316YT
901 9A05196800 TR,KSC23	16-Y-SHTA	KVTKSC2316YT
902 9A05196700 TR,KSA91	6-Y-SHTA	KVTKSA916YT
903 9A05196800 TR,KSC23	16-Y-SHTA	KVTKSC2316YT
904 9A05196700 TR,KSA91	S-Y-SHTA	KVTKSA916YT
905 9A05196800 TR,KSC23		KVTKSC2316YT
1906 <u>∧</u> 9A01388300 TR,KSD28		KVTKSD288Y
9907 9A03811700 TR,KSD10		KVTKSD1021YT
9A05196800 TR,KSC23		KVTKSC2316YT
905-908 ⚠ 9A05897200 RES,FUSE	0.47-OHM,1W	KRQ1CJR47
914 <u>↑</u> 9A05896400 R.,4.7-OHN		KRG1ANJ4R7H
921 <u>∧</u> 9A05896400 R.,4.7-OHN		KRG1ANJ4R7H
L91 🛕 9A05987100 RELAY HR		KSL1A007ZE
Y11.21 🛕 9A06224500 RELAY G		BSL4A006ZU
Y62  ⚠ 9A05987100 RELAY HR		KSL1A007ZE
601 <u>∧</u> 9A06326700 TRANS,PC		KLT5J020ZE
901 <u>∧</u> 9A06231900 TRANS,PC		KLT5J020ZJ
'P61.62 9A06012400 TERMINAL	,LUG	KJT1A023C8

REF. NO.	SS'Y PARTS NO.	DESCRIPTION	REMARKS
		SUB PCB ASS'Y [E]	KOP10984D
	9A06232610		KOP10984C
			KUP10984Z
	9A06235200	PCB , SUB	KJP05GA01ZM
CN31	9A05894700	WAFER(3P)	KJP03GA01ZM
CN41	9A05329100	WAFER MOLEX 5267-03A	KVD1N4148MT
D301	9A01390500	DIODE,1N4148MT	KVD342YCF02T085
D701-707	9A05890300	LED,YELLOW SLR342YCF02	KVD342VCF02T085
0708	9A05195000	LED,RED SLR342VCF02	KVD1N4148MT
0709-713	9A01390500	DIODE,1N4148MT	KVIMC4558S
C31.32	9A05195800	IC,MC4558S	KRVSR5SP
C71	9A05834700	SENSOR REMOTE	BVIANAM1224A
C72	9A06862000	I.C ANAM1224A	BJJ2E017Z
JK31	9A05316900	JACK HTJ064-05BG	KVTKSD1021YT
Q301		TR,KSD1021-YTA	KVTKSB102111
Q701-706		TR,KSR2206TA	KVTKSR22001 KVTKSR1206T
Q707-712		TR,KSR1206TA	
Q713-718	9A03745200	TR,KSR2206TA	KVTKSR2206T
Q721.722		TR,KSR2206TA	KVTKSR2206T
Q723-726		TR,KSR1206TA	KVTKSR1206T
Q727.728		TR,KSR2206TA	KVTKSR2206T
Q730-734	9A03745200	TR,KSR2206TA	KVTKSR2206T
Q735	9A05196900	TR,KSR1206TA	KVTKSR1206T
Q738.739	9A03811700	TR,KSD1021-YTA	KVTKSD1021YT
Q740.741	9A03747300	TR,KSB811-YTA	KVTKSB811YT
Q742-744	9A05196900	TR,KSR1206TA	KVTKSR1206T
Q745-747	9A03745200	TR,KSR2206TA	KVTKSR2206T
D330 331 /	N 9A05338200	R,METAL OXIDE FILM 1W 390	KRG1ANJ391H
RY31	9A06224600	RELAY G5Z-2A-DC12V	BSL4A008ZE
S701.702	9A04882500	SW,TACT SKHV10910A	KST1A012ZT
SW71	9A06326800	SW ROTARY SRBV14065A	BSR4A003Z
SW72	9A06224700	VR , ENCODOR EC16B1210	BSR2A006Z
VR31-33	9407240500	RES , VARIABLE [E]	BVV2W02B503Z
VR31-33 VR31-33	0406236000	RES, VARIABLE [J]	KVV2W02B503Z
	0.002333000	VOLUME, MOTOR RK6312MC282	KVV9A08A503Z
VR41		CRYSTAL,	KOX04194E120C

POWER	<b>PCB</b>	ASS'Y
-------	------------	-------

REF. NO. PARTS NO. DESCRIPTION	REMARKS
9A07241700 POWER PCB ASS'Y	
9A07242200 PCB POWER	KOP11205D
9A06699800 SW, PUSH JRA1202F [F]	KUP11205Z
D501-504 9A06236300 DIODE, ZENER UZP20BM	KSH1A005ZV
D505~520 9A01390500 DIODE,1N4148MT	KVDUZP20BM
D801.802 9A06224900 DIODE, BRIDGE PBU604F	KVD1N4148MT
JK51.52 9A06230500 TETMINAL SPEAKED	BVDPBU604F
L501.502 9A04875100 COIL.	KJJ5N003Z
Q501.502 9A05896000 TR,KTC2878B	KLEYK1R8KA
Q505.506 9A07240400 F.E.T., DUAL	KVTKTC2878BT
Q509-512 9A05892800 TR,KTC3198YT	BVT2N5566
Q513.514 9A05895900 TR,KTA1266YT	KVTKTC3198YT
Q515.516 9A05892800 TR,KTC3198YT	KVTKTA1266YT
Q517.518 9A05196700 TR,KSA916-Y-SHTA	KVTKTA1266YT
Q519.520 9A05196800 TR,KSC2316-Y-SHTA	KVTKSA916YT
Q521.522 9A05977200 TR.,2SD1585	KVTKSC2316YT
Q523.524 9A05977600 TR.,2SC4883A	BVT2SD1585L
Q525.526 9A05977500 TR.,2SA1859A	BVT2SC4883A
Q527 A 9A06676200 TR,POWER 2SC4467	BVT2SA1859A
Q528 \( \Delta \) 9A06676200 TR,POWER 2SC4467	BVT2SC4467
2529 \( \Delta \) 9A06676100 TR,POWER 2SA1694	BVT2SC4467
2530 A 9A06676100 TR,POWER 2SA1694	BVT2SA1694
2531 \( \Delta \) 9A06676200 TR,POWER 2SA1694	BVT2SA1694
2532 \( \Delta \) 9A06676200 TR,POWER 2SC4467	BVT2SC4467
2533 A 9A06676100 TR,POWER 2SA1694	BVT2SC4467
2534 A 9A06676100 TR,POWER 2SA1694	BVT2SA1694
2535.536 \( \Delta \) 9A05892800 TR,KTC3198YT	BVT2SA1694
2537.538 9A05197000 TR,KSR1210TA	KVTKTA1266YT
9A05196900 TR,KSR1210TA	KVTKSR1210T
9A03747300 TR,KSB811-YTA	KVTKSR1206T
1545.546 9A05196900 TR,KSR1206TA	KVTKSB811YT
525.526 A 9A06234500 RES, METAL OXIDE FILM	KVTKSR1206T
551.552 A 9A06234600 RES, METAL OXIDE FILM	KRG1ANJ152H
561-568 A 9A05896300 R.0.22-OHM,5W	KRG1ANJ181H
577.578 A 9A05896400 R,4.7-OHM,1W	KRF5EKR22H
579.580 △ 9A05338000 R,METAL OXIDE FILM 1W 10	KRG1ANJ4R7H
751.50 A 9A05336000 R.METAL OXIDE FILM 1W 10	KRG1ANJ100H
N63 ↑ 9A07366300 POWED SWITCH ASSIX (5)	BSL4A008ZE
EL STOTOGOGO POWER SWITCH ASS T IFI	KWZAH500ISW63
	KEL314P
5. 10022 1100 1 0313 1 0K F 1 H 9 M 0 4 R C 4 7 1 1 S	BRTPTH9M04BC471
- 100 1 001010H F1H9M04HC4/11S	BRTPTH9M04BC471
R53.54 9A07240300 RES , SEMI FIXED	BVNCC471B01